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ABSTRACT

Systematic analyses of instructional objectives are requested more and more in educational contexts, but there is little agreement about what such analyses are and what value they have. A few possible criteria for goal analyses are outlined and illustrated: empiricism and comprehensiveness in seeking information, firm rules for decision-making on the basis of the information gathered, behavior-oriented precision in formulating the objectives and empirical postchecking. Many questions arise from this for research and developmental work. Several are suggested. (Author/CK)

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SYSTEMATIC ANALYSES OF INSTRUCTIONAL OBJECTIVES: GOAL SEEKING, GOAL FOCUSING, AND GOAL ADJUSTMENT

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SYSTEMATIC ANALYSES OF INSTRUCTIONAL OBJECTIVES: GOAL SEEKING, GOAL FOCUSING, AND GOAL ADJUSTMENT

Abstract.- Systematic analyses of instructional objectives are more ande more in request nowadays in educational contexts, but there is little agreement about what such analyses are and what value they have. A few possible criteria for goal analyses are outlined here: empiricism and comprehensiveness in seeking information, firm rules for decision-making on the basis of the information gathered, behavior-orientated precision in formulating the objectives, empirical postchecking. Many questions arise from this, however, for research and developmental work: To what extent does goal-analytic work fulfilling all these criteria at present occur in practical educational contexts? How are goal concepts normally formed in various groups within educational planning? How do people feel about the more precise and systematic methods? What actual value can they empirically be shown to have as guidance strategies?

The use of systematic goal analyses in the field of education is no novelty. Nevertheless, arguments with a goal-analytic basis are undoubtedly accorded greater importance in educational discussions and planning today than they were earlier. It is not unknown these days for a student to ask his academic teacher what the aim of the course being taught is; such stimulating direct questions were certainly not common before. But the fact that publishers, text-book writers, teacher trainers, education planners etc. speak more and more of objectives and goal analysis does not mean that they particularly agree about what these terms imply.

The terms obviously crop up in discussions with more persistence than accuracy. Those using them have sometimes proved to be comparatively unaware of how a systematic goal analysis functions and, when given descriptions of typical procedures, they then often feel rather doubtful as to its value. Increased precision is seen sometimes as a threat, sometimes as a triviality. At the same time there are fanatics who believe that they could completely revolutionise teaching results simply by using goal-analytic techniques more systematically. This

division of opinion calls for a closer examination of concepts and empirical studies.

This is not the place for a complete analysis, and no empirical data will be given. The main purpose here is partly to outline a few possible criteria for what a systematic goal analysis can involve and partly, in connection with this, to suggest some problems which appear to merit a closer empirical exploration. Those who follow the international discussions on educational technology will not find very much that is new here; a short presentation of some basic points can nevertheless be of value.

Goal Analysis as a Stage in the Work of Constructing a System

Systematic goal analysis is a process with several separate elements. The necessity of some of these elements may be debatable, but the process has a very palpable product: a definite series of goal descriptions (for a given field). This product will normally have an important role to play in guiding the development of a complete instructional system, as suggested in Box 1. (Box 1 is primarily formulated from the point of view of the construction of study material, but the main features of the program described there can also be applied to the systematic development of other types of teaching system.)

The goals specified state the "terminal points" of the teaching and therefore occupy a central position in our analyses of prerequisites. Other elements are pupil specifications ("initial points") and situation specifications (which state, for example, the extent of the resources available). Hereafter, the discussion will be restricted to the goal-analytic phase and no details will be given of the other elements in the total process of developing a teaching system. It is simply by way of introduction that the main purpose of goal analysis, as an instrument of guidance and one stage of the work within an overlapping planning system, has been pointed out.

Some Possible Criteria

We all have ideas about objectives in one form or another, and we have

all been forced now and then to formulate these ideas. Occasionally, the term "goal analysis" (or "analysis of objectives") is used to describe these comparatively unsystematic attempts simply to write down or in some other way make explicit our ideas about goals. It would be preferable, however, to keep at least the term "systematic goal analysis" (and "systematic analysis of objectives"; we use these two expressions interchangeably in this paper) for work which complies with certain standards. The question then is which criteria should be applied.

There is almost no common practice here to fall back upon, nor any indisputable authority. If we try to summarise the various lines of development in current goal-analytic work, however (and primarily take up general criteria which can normally be applied in all fields and used both for objectives at separate stages of a project and for final objectives), it should be possible to agree that at least the following criteria are reasonable starting-points (cf. also the survey in Box 2):

(1) an empirical search for information as a basis for fixing objectives (it is not enough simply to try to formulate one's own goal concepts);

(2) a comprehensive search for information (taking empirical data from a single source normally involves a risk of bias);

(3) collection of an empirical basis for giving priority to or evaluating possible objectives;

(4) firm rules for decision-making on the basis of the information gathered (a "firm decision-strategy");

(5) behavior-orientated precision in formulating goals (an important phase later is formulating the objectives in unambiguous, simple, communicable terms);

(6) a supplementary logical check;

(7) empirical goal checking (investigating how "realistic" goal specifications prove to be in concrete cases, assuming certain conditions with regard to resources and initial behavior);

(8) post-checking revision of goals (successive revisions can be made of goal formulations on the basis of the checking suggested in point 6).

Box 1. Some typical phases in the work of systematically constructing study material

Procedure	Final product
1. Preparatory work	
1.1. Analysis of prerequisites	
1.1.1. Goal analysis	List of final demands on pupils after completion of course ("terminal behavior")
1.1.2. Pupil analysis	Survey of pupils' previous knowledge and general qualifications ("initial behavior")
1.2. Subject-matter analysis	Catalogue of the basic items in the subject-matter, survey of its logical and/or psychological structure
1.3. Media-method investigation	Preliminary decision on media for presentation and general methods
2. Construction of preliminary version	
2.1. Preparatory decision on procedure	Decisions on model for procedure and general disposition of material
2.2. Compilation of items of material	A preliminary collection of the different items of the teaching material (poss. as a loose-leaf catalogue)
2.3. Final adjustment of media and sequences	Classified material, corrected in view of assessed need for repetition and supplemented with tests, illustrations and appendices etc.
3. Quality control	
3.1. Gradual testing and revision ("successive approximation towards objectives")	(a) Data on effects of material and pupil reactions to guide revision (b) Revised material for renewed testing Etc.
3.2. Final testing	Data on the effects of the material in its final form on a representative group of pupils
3.3. Writing of manual	A handbook which among other things gives "maker's specifications"

Box 2. What does a systematic goal-analysis comprise?

There is at present no generally accepted norm as to which criteria are necessary and sufficient for a systematic goal analysis; and even partial analyses are naturally often worthwhile. Some important components in a more complete process are, however, as follows:

1. Search for goals
   - with empirical and
   - comprehensive methods,
   - providing a basis for priorities.
2. Focusing of goals
   - with firm rules for decision-making,
   - behavior-orientated precision in formulation,
   - and checking that goal conflicts do not occur.
3. Adjustment of goals
   - with empirical goal checking: testing of "goal-realism",
   - and goal revision: successive, post-checking revisions.

The order in which the "criteria" have been placed here is at the same time a program, a sequence of work-phases within the framework of a complete goal analysis.

Many more sub-criteria can easily be formulated, and it is also possible to summarise the eight points above under more comprehensive headings. A comprehensive three-phase division could be formulated thus:
(I) goal seeking (points 1-3), (II) goal focusing (points 4-6), and (III) goal adjustment (points 7-8). - Phase 6-8 can also be excluded as a kind of supplementary work which is not always needed and that leaves two main tasks: (a) to establish goals (points 1-4) and (b) to formulate goals (points 5-6). In the following section some comments and examples will be given for some of the main points in the program outlined here.

Goal Seeking: Empiricism and Comprehensiveness

The main aim in the introductory, goal-seeking phase is to obtain as com-

prehensive a basis for decisions as possible. Some obvious questions to start with are:

(1) How is a comprehensive basis for decisions concerning the X field of education to be obtained? What sources of information are to be consulted?

(2) Are there at present any obvious discrepancies between the statement of objectives and the realisation of those objectives? Are there discrepancies between the demands made on objectives today and the demands that will be made in the forseeable future?

Box 3 shows different ways in which these questions can be approached. The left-hand column gives examples of a number of possible sources of information, divided into the main categories: texts, "practitioners", contact groups, teachers, pupils, and other members of society in general. The plus signs in the other three columns are intended to mark some of the cases where a survey of the particular subject-area suggests that information is primarily needed. The signs in the table are naturally only examples, although they have been chosen with a view to presenting a reasonable pattern. (The plus signs in brackets mark secondary sources; and the unmarked sections those which are not relevant here.) In the following we will refer to concrete examples - mostly from current Swedish work - of the various types of analysis.

Text analyses often make good starting-points, and in many cases the official documents are worth a closer study. An example of this type of text analyses (focusing on the demands made by society on graduate teachers) can be found in Löfqvist, 1969. The official texts primarily describe the "desired present situation"; what it cannot give any information on is the actual present situation (which can after all sometimes differ considerably from the planned ideal). Moreover, official plans are sometimes formulated in extremely vague and general terms. So additional, more precise information is often needed. - A selection of the most frequently used textbooks can in many cases give more substance to the general outlines. They provide a picture which is often closer to the actual present-day situation. An example of textbook analyses can be found in Lindell, 1969 (focusing on the teaching of the German language to Swedish beginners). At the same

Box 3. Goal-seeking: Table giving examples of possible sources of information

Sources of Information	Present Situation		Future (Desired)
	Actual	Desired	
1. Texts			
1.1. Official documents (curricula etc.)		+	
1.2. Representative text-books	+		
1.3. International documents on policy		+	+
2. "Practitioners"	+	+	
3. Contact groups	+	+	
4. Teachers			
4.1. Representative groups	+	(+)	
4.2. Special-interest groups	(+)	+	+
5. Pupils			
5.1. Representative groups	+	(+)	
5.2. Special-interest groups	(+)	+	+
6. Other rep. of society			
6.1. Representative groups	+	(+)	
6.2. Special consumer groups	(+)	+	+
6.3. "Experts"	(+)	+	+
6.4. "Planners"			+

See text for more detailed discussion and explanations. Points 2-3 are of particular importance in the case of limited job-training, but less significant in general education, e.g. in the comprehensive school.

time, it should not be forgotten that much of the content of the textbooks is there by tradition rather than as a result of planned analyses (Tingsten's stimulating analyses of textbooks in history and geography show how old traditions often cling with remarkable tenacity in school books that are frequently reprinted; Tingsten, 1969), and that those writing the textbooks have not always fulfilled the aims set out in the curriculum. So a textbook analysis can usually only be yet another small part of the goal-analytic whole. - In some fields, documents stating international policy have been issued and they help to clarify the desired trends of development.

One central source of information is those people who can be grouped together under the general heading "practitioners": those who, to a large extent, practise skills and apply konwledge within the subject area with which the analysis is dealing. When training for a particular job is being studied, then naturally the job in question is the main object of interest; in many other cases the group is not so clearly defined. Several different methods of collecting data are possible: spot questioning (by interview or questionnaire), personal reporting for a specified period ("diary method"), or direct and detailed observations of behavior. Some of the main questions arising are: Which skills in the field seem the most essential for an adequate total pattern of behavior and an individual feeling of fulfilling a function well, and on what points do the "practitioners" feel their basic training to be inadequate? - In many cases interesting material is revealed by questioning the persons closest to the "practitioners" ("contact groups"). This applies particularly in studies of job-training for professions specifically involving contact with others. Studies of " practitioners" and "contact groups" are central to what is known as the B Project in our department, a project based on job-analyses of school-administrators, lecturers in teaching method and tutors; see e.g. Gestrelius, 1969.

Both teachers and pupils - those directly involved in teaching - are natural sources of information in many goal-analytic contexts. What in fact are the central ideas on objectives in the teaching world today and what changes seem most urgent? There are two ways in which teachers

and pupils can be studied: either by picking random samples of individuals (perhaps primarily in order to get a cross-section picture of the actual situation, such as it is experienced by representatives of both categories), or specially choosing groups of people with a particular interest in the subject-area (and then perhaps primarily in order to obtain a broad outline of the changes needed). A study of pupil-preferences in the choice of material is reported, for examples, in Lindsten, 1969. This aspect can be named "pupil-centered need analyses". Swedish commissions on schools have sometimes made use of this type of need analyses (see Härnqvist & Grahm, 1963).

Representatives of society outside the circle of "practitioners" and outside the school world should also frequently be given a chance to make themselves heard - especially when we deal with final objectives. Random samples can perhaps also be used for this occasionally, but it is more usual to approach special "consumer" groups (the prospective employers or the institutes for further studies). "Consumer analyses" have actually played a not unimportant part in the work of Swedish comissions on schools; Urban Dahllöf's well-known work on 'Gymnasium' education is an obvious example (see Dahllöf, 1965; cf also Husén & Dahllöf, 1960). A similar approach is often needed in projects on the development of material; see e.g. a study of foreign language requirements in sections of the Swedish business world in Larsson, 1969). This aspect - in contrast to the pupil-centered need analyses mentioned above - can be called "society-orientated requirement analyses". - In addition, it is often valuable for those constructing material to be confronted with some kind of "expert group" at an early stage. These people may be experts in the subject (perhaps in the front-line of research with quite different ideas about what is and is not important than those suggested by conventional textbooks). But they could also be experts in method: people who have been particularly intensively engaged in teaching and in teaching innovations in the field in question. Goal-analytic work, based on "expert" opinions, was included in planning the broad outlines of the IMU system, a Swedish

methods- and - materials system for individualized mathematics instruction (see Öreberg, 1966). When the main purpose is to gather ideas and suggestions from a group with a special interest, a suitable starting-point can be a conference with small group discussions, at which different points of view are confronted, resulting possibly in a closer definition of concepts and a decision on priorities for partial objectives (see opinions stated in Bjerstedt & Rodhe, 1969). - On the question of the future, information can sometimes be sought from various categories of people specially detailed to plan for the future, simply called "planners" in Box 3. Unfortunately, there are all too few persons of this type in the world of education today.

The catalogue of possible sources of information perhaps gives the overwhelming impression of this being an extremely long-term process. It should be understood, however, that these sources are hardly ever all used at the same time. In each separate case a decision has to be made as to which sources are the most important in view of the resources available and the problems to be studied. Often, however, it turns out to be more advisable to explore more than one source less intensively than to concentrate everything on a single aspect: it is easy to become biased if restricted to one single source of information. Some of the criticism directed at e. g. consumer analyses does not claim primarily that such analyses are unjustified, but rather that they are utilized too directly in the planning process without sufficient balance between different points of view. Similar criticism has often been made of those work analyses, which only study the actual present-day situation; it is claimed quite rightly that additional information must be sought, on which desirable future models and objectives can be based.

Forming a Basis for Priorities and Making Decisions

After the completion of as detailed and comprehensive a search for information as the particular purpose and the existing resources permit, the question still remains of how decisions are to be made on the basis of the information now available. It is quite conceivable that the total

picture given by the information will show a considerable degree of conflict between the different sources (in the discussion of goals for universities, for example, the opinions of consumers and research workers often differ), or that the objectives outlined in official quarters are strongly at variance with what powerful tides of public opinion or objective observations deem reasonable. If this type of picture should emerge, it is not the duty of the research worker to make the decisions or try to conjure away the difficulties; instead he should pass the information to the official decision-makers most closely concerned, who will thus be given a more satisfactory basis - with all the facts on the table - for future action. It should be added, however, that such contradictory and unwieldy material is not often obtained. More usually, the various sources of information complement one another and no real conflict arises between official objectives and the rest of the sources; instead the latter make possible concretion and specification of the comparatively vague and general terms of the official source. In such cases the collection of material has provided a considerably improved basis for the work remaining to be done.

It is difficult to state general rules for the measures needed to form a basis for priorities and to make decisions, since in the actual transition from the collection of material to the making of decisions the measures vary considerably depending on the type of objective (partial or final) and the type of education concerned. In any case, it is important to decide on firm strategies. Up to now, however, relatively little systematic work has been done here - within the no man's land between research-workers and politicians.

Normally it can be an advantage to keep the two phases clearly separate. Before deciding on priorities the research-worker or the worker in educational development must first gather information; this can be seen as a sub-section under the heading "Search for goals". In some cases the decision-making can be a fairly simple procedure with in no way far-reaching consequences (e.g. in the case of sub-sections of a course-area the general outline of which has already been decided, or when the available material is clear-cut); in other cases on the other

hand, it can have considerable political consequences and as a result involve quite different categories of persons. This decision stage is a sub-phase under the heading "Focusing of goals".

Sometimes the information needed on priorities can emerge more or less automatically at an early stage. But it is often an advantage to collect as much comprehensive information as possible first, and then find out how it is evaluated or ranked by various interested groups. The main advantage here is that the evaluation or ranking can be carried out more comprehensively, once a primary basis has been obtained. This can meen that some of the groups named in Box 3 are contacted twice: first to get spontaneous informations on objectives, secondly to get from different points of view evaluations of (rankings of) lists of partial objectives, compiled on the basis of the first collection of data.

It is perhaps rather unusual to incorporate an "evaluation phase" separated in time from the primary search for information in this way. Concrete examples and more detailed arguments can be studied, however, within the framework, for example, of Project B, mentioned earlier (see Gestrelius, 1969).

Formulating Objectives

When it comes to formulating objectives, it has proved advantageous (a) to express the objectives in terms of behavior and (b) to try to combine the formulation of objectives with the working out of "terminal tests" (final tests which contain tasks corresponding to all points in the objectives stated).

Many educational technologists now agree that an effective statement of objectives has the following qualities:

(a) It does not confuse description of courses (process description) with description of objectives (product description). What is gone through in a course ("taught") is after all not identical with what is "learnt". An effective description of objectives usually works in terms of "terminal behavior" (what the pupil should be able to do when he has completed the course - provided the course functions in the way we wish).

(b) The description of objectives concerns to the greatest degree

possible observable (and thus clearly communicable and verifiable) conditions and avoids the use of terms which can be given varying interpretations by different readers. It is not enough, for example, to say that a pupil should know a law of physics A, or that he should understand a mathematical argument B. We must try to explain how the pupil is to demonstrate that he "knows" A or "understands" B. (This means that terms such as "understand" and "know" should be avoided and preference given to terms such as "give examples of", "construct", "identify", "reproduce", "enumerate" etc.)

(c) The description of objectives also states the prerequisites, which define more closely the demands made on the pupil's behavior. We do not simply say, for example, that the pupil should be able to type out an English business letter. We must also state if he is to be able to do it both from oral dictation and from a handwritten manuscript (type of stimulus), if he is to be able to do it both on an ordinary office typewriter and on an electric typewriter (type of tool), if he is to be able to do it with or without the help of a dictionary (type of aid permitted) etc. (A clear definition of the stimulus situation is important in order to prevent what unfortunately often happens: that we unconsciously lower our standards and make do with indirect stimulation of the type verbal answer to verbal stimulus instead of a more direct response in a complicated concrete choice situation.)

(d) The description of objectives states adequate liminal values, which define more precisely what we consider to be a satisfactory result, as soon as we are dealing with a continuum of possible achievements. What is meant, for example, by typing out an English business letter? What demands do we make on speed? How many errors are we prepared to tolerate? (This demand for a clear statement of liminal values contrasts strongly with the numerous expressions to be found in traditional curricula, such as "some knowledge of...", "deeper knowledge of ...".)

(e) Finally, the description of objectives is inclusive; it must not exclude any part of the total goal area, even if one particular part should prove more difficult to formulate in terms of specific behavior. Non-cognitive (e.g. attitudinal) objectives can sometimes be difficult to

describe precisely; this fact must not be used as an excuse for not including then in the goal-analytic phase.

Logical Goal Analysis and Other A priori Checks

As one sub-phase within the process of "goal focusing", we might like to include a "logical goal analysis" for the purpose of studying the final formulations of the various goal components in relation to each other. Difficulties can arise, for example, if some objectives conflict with others. In such cases of conflict, the person responsible for analysing the objectives usually has to refer the question back to the decision-making level for a new decision on priorities. A preliminary logical analysis is naturally made during the goal-seeking stage, e.g. in the text analyses, but the final logical check should be made at the same time as the descriptions of objectives are given their final form. - Other a priori checks can also be made, e.g. expert judgments of how far the descriptions of objectives are realistic in the face of earlier experience of the target-groups in question.

Adjustment of Objectives: A posteriori Checks and Revision

In one sense the goal-analytical work is complete once a final formulation of objectives has been precisely defined and put into operation in the form of a terminal test. After that the pedagogical efforts to attain the objectives take over. If the first attempts achieve little success, it is usually not the objectives that need revising, but the methods or time schedule. Normally a teaching system cannot be considered ready until the given objective has been reached.

The chances of carrying out this ideal strategy, however, depend largely on resources: time for teaching and time for systematic improvement of methods. There is a strong possibility that in some cases (and despite what is above called a priori checks) we have aimed unrealistically high and that a revision of the levels of the objectives set is well-motivated. Resources can also change in a way not predictable at the start, such as when the time alloted to a course is reduced. (Even though one in principle does not want to accept the present all too domi-

nant role played by time schedules, there are naturally often sound reasons for this kind of limitation of resources.)

The normal checking of the quality of methods and material, in trying out a new teaching system, can in some situations be transformed into a check of how realistic the objectives are, allowing for a certain initial level in the target-group and certain resources. If an empiric test of this kind suggests that the level of the objectives is unrealistic, then it may be necessary to revise the objectives and undertake new tests.

It would take too long to discuss this supplementary work in detail; what has been said above must suffice to make it clear that work on goal analysis can also involve a gradual adjustment of objectives, making use of empirical feed-back.

A Few Queries

It is obvious that in many cases when people say that they are carrying out goal analyses, they are in fact only working with a relatively small part of the spectrum of tasks outlined here. The reasons for this are sometimes sound; on other occasions it seems to depend mainly on an unawareness of the opportunities available.

Among the influences which have served to bring goal-analytical work much more noticeably to the fore, is the interest in the programming of instruction and in systems of educational technology (see e.g. a "classic" like Mager, 1961, or discussion reports like Popham et al., 1969). But the point that is most heavily stressed in these contexts is often the precise formulation of objectives. It seems very reasonable (and there are experiments on this, too) that the process of instruction can be speeded up if teacher and pupils have a clearer idea than is usually the case of where they are going; irrelevant behavior then tends to diminish and the student trains more intensively what is later going to be tested. On the whole, this emphasis on the value of formulated objectives as an instrument of guidance and focusing has had a very beneficial influence on both the general discussion of objectives and the work being done on systems of material and methods. Nevertheless, it

is surprising how indifferent some of those urging the need for precision can sometimes be to the relevance and significance of the given objectives seen from other points of view. In such cases our Criterion 5 (the formulation of objectives) has been allowed to weigh so heavily that there is a risk of other points of view (the seeking of goals and decisions on goals) being neglected entirely. This state of affairs has led to some rather strange contributions to educational discussions, which sometimes give the impression that one is forced to choose between precise trivialities or diffuse but significant objectives. If it could be made clear that the setting up of objectives and the formulation of objectives are <u>two stages</u> - both very important - in one and the same goal analysis, then the debate would become less muddled.

There are other examples of an unhealthy bias. The demand for empirical foundations has among other things resulted in extensive and extremely useful consumer analyses being made. These analyses have sometimes, as was hinted above, aroused criticism. This criticism has occasionally been expressed in political slogans ("we shall not let education be manipulated by the business world and high finance") but has all the same contained an important core of insight, namely that objectives should not be set up on a one-sided empirical basis. Short-term utilitarian perspectives (dredged from consumer analyses) must naturally not be allowed to dominate educational planning to such an extent that we deprive ourselves of the chance of developing completely new ways of achieving such a reconstruction of society which we all from other points of view agree to be desirable. Fundamental values must in some way be inserted in the equation, so that we are not tempted to equate consumer analyses with educational planning (cf. some viewpoints in Ofstad, 1968). The work carried out on consumer analyses has been very important, to some extent pioneering, but those interpreting it have perhaps on occasion been over-eager in generalising the results. We then see persons strongly emphasise our Criterion 1 and at the same time tend to forget Criterion 2, which balances it (and are not always particularly interested in the other criteria).

Taking into consideration these various tendencies towards what has here been called one-sidedness, the following question seems self-evident: If we accept the criteria given above as a statement of a complete, systematic goal analysis - to what extent does this paragon actually exist in our hurried and stressed environment? This question would be worth studying more closely, but at the present time the answer would probably be that such complete analyses are at least not common. And what then is the reason for this? One important factor is naturally that the technique is not widely known. But there can be other reasons: Is their value perhaps doubted when considering the amount of work involved?

In fact, this field, which has attracted increasing interest and activity, contains a whole series of subjects suitable for research and developmental work. It would be of interest, for example, to establish a series of alternative models for goal-analytic processes and for statements of objectives. Many questions then follow naturally: How common are the various models and the various types of goal descriptions in different educational developmental contexts? What goal concepts and goal descriptions are normally to be found at present in the sphere of practical education (among those working on curricula, writing textbooks and training teachers, among administrators, teachers and pupils)? In what ways do these goal concepts and goal descriptions differ from the norms most commonly recommended by experts on goal analyses? Which advantages, respectively disadvantages, do various categories see in the more exact methods? Which arguments occur most commonly against the use of increased precision? And to what extent can one show, by means of experiments, clear-cut effects of strict goal analyses in various practical situations?

This problem area of goal analyses, so hastily visited here, appears to be of central importance and to be able to have practical consequences for several aspects of educational planning. There is good reason, therefore, for making it the object of further conceptual analyses and discussion and increased empirical investigation.

REFERENCES

Bjerstedt, Å. & Rodhe, B. (Eds.) Internationell förståelse och internationellt medansvar som undervisningsmål: Rapport från en arbetskonferens. Pedagogisk-psykologiska problem (Malmö: School of Education), No. 99, 1969.

Dahllöf, U. The contents of education with regard to demands for different jobs and for further studies. (2nd ed., mimeogr.) Stockholm: School of Education, 1965.

Gestrelius, K. Utbildningsplanering med befattningsanalytiska metoder. Pedagogisk-psykologiska problem (Malmö: School of Education), No. 83, 1969.

Husén, T. & Dahllöf, U. Mathematics and communication skills in school and society. Stockholm: The Industrial Council for Social and Economic Studies, 1960.

Härnqvist, K. & Grahm, Å. Vägen genom gymnasiet. Stockholm: SOU, 1963.

Larsson, I. Tyska språket i delar av svenskt näringsliv: En studie i enkätmetodik och en undersökning av språkbehoven. Pedagogisk-psykologiska problem (Malmö: School of Education), No 101, 1969.

Lindell, E. A system of study materials for the teaching of foreign languages: Principles and examples. Didakometry & Sociometry, 1969, 1, 91-124.

Lindsten, C. Elevpreferenser vid stoffval i hembygdskunskap, årskurs 3. Pedagogisk-psykologiska problem (Malmö: School of Education), No. 95, 1969.

Löfqvist, G. Analys av officiella texter för bestämning av kraven på ämneslärarbefattningen. Pedagogisk-psykologiska problem (Malmö: School of Education), No. 103, 1969.

Mager, R. F. Preparing objectives for programmed instruction. San Fransisco: Fearon, 1961.

Ofstad, H. UKAS om samhällets behov. Dagens Nyheter 21. 5. 1968.

Popham, W. J. m. fl. Instructional objectives. Chicago: Rand McNally, 1969.

Tingsten, H. Gud och fosterlandet. Studier i hundra års skolpropaganda. Stockholm: Norstedt, 1969.

Öreberg, C. et al. IMU-projektet: Målbeskrivning för ett självinstruerande studiematerial i matematik för grundskolans högstadium. Pedagogisk-psykologiska problem (Malmö: School of Education), No. 43, 1966.

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Abstract card

Bjerstedt, Å. Systematic analyses of instructional objectives: Goal seeking, goal focusing, and goal adjustment. Didakometry (Malmö, Sweden: School of Education), No. 28, 1970.

Systematic goal analyses are more and more in request, but there is little agreement about what such analyses comprise and what value they have. In this paper, a few possible criteria are outlined and illustrated: empiricism and comprehensiveness in seeking information, firm rules for decision-making, behavior-orientated precision in formulations, empirical post-checking. Many questions arise from this, however, for research and developmental work; some of these are listed as starting points for further analyses and studies.

Indexed:
1. Instructional objectives
2. Curriculum research

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